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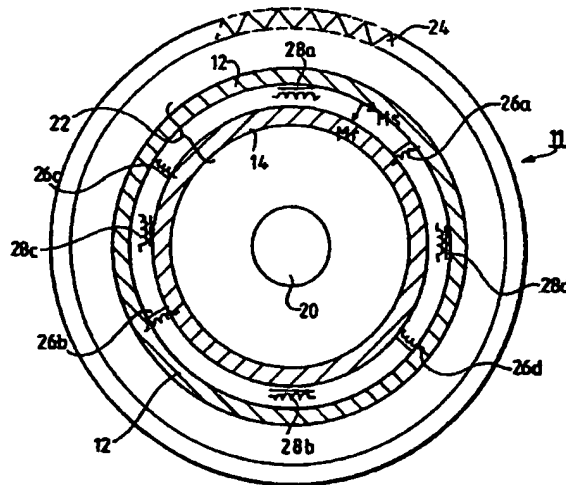
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(54) Title: **MAGNETISED TRANSDUCER ELEMENT FOR TORQUE OR FORCE SENSOR**



(57) Abstract: A magnetic torque transducer for a structure such as a disc (10) through which torque is transmitted between a central shaft (20) to which the disc is mounted and an outer periphery such as a gear wheel (24). The intervening region through which torque is transmitted is magnetised to provide a transducer element (22) having two magnetised, annular regions (12, 14: 54, 56) which cooperate to emanate a magnetic field (Ms) that is torque-dependent. The two magnetised regions may be longitudinally-magnetised (12, 14) through the disc or circumferentially magnetised (54, 56) with opposite polarities. A sensor assembly of non-contacting sensors (26a-26c) is used to detect the emanated field and connected in circuitry to provide a torque-dependent signal. In an alternative a single magnetised annular region is employed. The annular region or regions need not be a complete annulus. The same disc-like structure can also be used as force sensor for measuring bending moments or other forces which result in stress occurring in the disc.